IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/590,750	Confirmation No. 4399
Applicant (s)	:	Mridula Kapur	
Filed	:	August 25, 2006	
TC/A.U.	:	1796	
Examiner	:	Jeffrey S. Lenihan	
Title	:	FILM LAYERS MADE FROM POLYMER FORMULATIONS	
Docket No.	:	63500A	
Customer No.	:	00109	

AFFIDAVIT Under
37 CFR 1.132

STATE OF TEXAS)
) ss.
County of Brazoria)

I, Mridula Kapur, declare and state:

1. I have a Ph.D. degree in Chemistry, in 1990 from Texas A&M University, College Station, Texas.

2. I have been employed by The Dow Chemical Company since 1991. I am currently a Research Leader in the Basic Plastics, Polyethylene R&D group.

3. I am a named inventor on US patent application 10/590,750 ("the '750 application") and as such, I am familiar with the claims as currently pending. As set forth in claim 1, our invention is a film comprising, *inter alia*, a layer made from a polymer composition comprising a homogeneously branched high molecular weight (as indicated by the low melt index) polyethylene and a low molecular weight polyethylene.

4. I have read US patent 4,461,873 ("Bailey"), the prior art reference cited by the Examiner handling the examination of the '750 application.

5. From Table I of Bailey (see column 3, about lines 22-24), and as confirmed from the examples, it is clear to me that Bailey teaches using a heterogeneously branched polymer for its high molecular weight component.

6. I have arranged for the following experiment to be carried out to demonstrate that films made with a homogeneously branched high molecular weight polyethylene as claimed in the '750 application will have improved water vapor transmission rates as compared to similar films made with heterogeneously branched high molecular weight polyethylene as taught by Bailey.

7. A resin was produced by reactor blending a high molecular weight fraction produced by a standard Ziegler-Natta catalyst in a first reactor, using those catalysts as described in U.S. Patent 3,257,332, U.S. Patent 3,051,690, U.S. Patent 4,314,912 (Lowery, Jr. et al.), U.S. Patent 4,547,475 (Glass et al.), U.S. Patent 4,612,300 (Coleman, III) and U.S. Patent 4,659,685 (Coleman, III)., and a low molecular weight fraction also produced by a standard Ziegler-Natta catalyst in a sequential second reactor. It is well known that such Ziegler-Natta catalysts will produce heterogeneously branched polymers, that is polymers with an Mw/Mn greater than 3. The total composition has a melt index (I_2) of about 0.93 g/10 min, a density of about 0.967 g/cm^3 and a molecular weight distribution (Mw/Mn) of 13.34, as described as Comparative Example 3 in the table below and shown with Example 1 from the '750 application. The Mn and Mw were calculated as described in the '750 application.

	Example 1 (reproduced from the '750 application) (Component A + Component B)	**Comparative Example 3**
Component A Density (g/cm^3)	> 0.955	0.948 (predicted)
Component A I_2 (g/10 min.)	About 0.02	0.08 (predicted)
Weight Fraction of component A (percent)	45	49.4 (predicted)
Overall Density (g/cm^3)	0.9606	0.967 (measured)
Overall I_2 (g/10 min.)	0.85	0.93 (measured)
Overall I_{10}/I_2	13.1	12.7

Mn	12,410	9,690 (measured)
Mw	104,550	129,290 (measured)
Mw / Mn	8.43	13.3

8. A film was then made using a blow up ratio of 1.8 and tested for water vapor transmission rate ("WVTR") according to the methods described in the '750 application.

9. The results of that testing showed that the film made with Comparative Example 3 exhibited a WTVR of 0.31 g-mil/100 in^2*day, as compared to 0.23 for Example 1 (see Table 2 in the '750 application).

10. The reported standard deviation for the WVTR measurement is 0.01, meaning that the measured difference between Example 1 and Comparative Example 3 is both real and significant (an improvement of over 25%).

Further affiant sayeth not.

Mridula Kapur

Sworn to and subscribed before me this 14th day of January, 2010.

Notary Public

(SEAL) MONICA RUBIO
Notary Public, State of Texas
My Commission Expires
December 12, 2013